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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/609,046	06/30/2000	D'Arcy M. Tyrrell III	062986.0186	2977

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EXAMINER	
STRANGE, AARON N	
ART UNIT	PAPER NUMBER
2153	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/26/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/609,046	TYRRELL ET AL.	
	Examiner	Art Unit	
	Aaron Strange	2153	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-29* is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant has argued that both Cajolet and Hancock fail to teach limitations which are taught by the other reference, as clearly indicated in the Office action of 8/11/2006 and the present Office action. Hancock teaches providing a sample of a rendered frame prior to completion of rendering the frame and Cajolet teaches receiving an input from the client in response to a receipt of a sample frame (see rejection of at least claim 1, below).

2. With regard to claims 1-29, and Applicant's assertion that the specification describes the claimed subject matter, the Examiner respectfully disagrees. Page 9, lines 9-19 merely describes the client submitting a render job containing several frames which are distributed to several render hosts. Page 11, lines 9-15 merely describes the schedule server, and states that it receives frames and distributes them to render servers. Nothing in either of these sections even mentions providing samples to the client. Page 34, lines 1-7 does describe sending samples to the client, but only samples

of "the rendered job". This is different from and does not provide support for providing samples of an individual frame that is a part of a render job.

Regarding Applicant's assertion that "Since samples of a render may be provided prior to completion of the render job by a render server in a render host, those samples can clearly be individual frames" (Page 11 of Remarks), it is noted that this is not the claimed limitation. The present claims require "a render job having ... a plurality of frames" and "providing one or more samples of the rendered first and second frames for the render job to the client". These limitations were added by Applicant and argued as different from the concept of providing an "individual frame" as the sample (See at least Page 11, Lines 2-9 of Remarks filed 5/8/2006).

3. In the interest of expedited prosecution, the Examiner would like to note that subject matter directed toward providing samples of a render job or portion thereof prior to completion of the render job or any portion thereof, even if clearly claimed and supported by the specification, is not likely to place the present application in condition for allowance. Hancock clearly teaches the concept of providing samples of a distributed render job in progress, and it would have been apparent to one of orinary skill in the art that the samples could be provided for an entire job or any portion thereof, depending on the needs of the system users.

The Examiner would like to express willingness to conduct an interview to

discuss any potential amendments that Applicant feels may expedite prosecution of the present application. If Applicant feels that such an interview would be beneficial, he/she is encouraged to contact the Examiner to schedule one.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. With regard to claim 1, the limitation "providing one or more samples of the rendered first and second frames....prior to completion of rendering the first or second frame by the first and second servers" is not described in the specification. The only reference to providing samples that the Examiner can locate in the specification appears at page 34, lines 1-7. However, this section only describes a remote site providing a sample of a render job prior to completion of the entire job. The claims, as amended, recite providing samples of individual frames that are portions of the entire

render job (lines 2-4). Providing a sample of a render job in progress is not the same as and does not provide support for providing samples of individual frames from the render job. Furthermore, it should be noted that receiving samples from a remote site, as described in the specification, is different from and does not provide support for receiving samples from an individual render server at that remote site.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-29 rejected under 35 U.S.C. 103(a) as being unpatentable over Cajolet (US Patent 6,192,388) in view of Hancock ("Distributed Parallel Volume Rendering on Shared Memory Systems").

9. **Regarding claim 1**, Cajolet shows steps for:

receiving from a client a render job having an associated job profile (graphics program) and a plurality of frames in an animation sequence (col. 5 line 54- col. 6 line 4);

distributing via a communications medium (62) a first frame of the animation sequence to a first one of a plurality of render servers (86) and the second frame of the

animation sequence to a second one of the plurality of render servers based at least in part on the job profile; the first and second frames being different (col. 6 lines 2-8, 28-45, col. 7 lines 48-52);

rendering the first and second frames concurrently at the first and second render servers (col. 6 lines 4-8, 40-45, col. 10 lines 18-25); and

forwarding the rendered first and second frames to a network storage system for retrieval by the client (Col 10, Lines 37-40);

providing one or more samples of the rendered frames for the render job to the client prior to completion of the render job by the first and second servers (Col 10, Lines 34-40); and

receiving an input from the client in response to the one or more samples (assigns a new portion of the render job to the available assisting computer)(at least Col 10, Lines 40-47).

Cajolet fails to specifically disclose providing samples of the frames prior to completion of rendering the frame. Hancock discloses a similar system for distributed rendering and teaches providing samples of an image prior to completion of rendering the image (at least Section 2.1; Section 3, "Refinement"; and Fig 8). This would have been an advantageous addition to the system disclosed by Cajolet since it would have allowed the user to quickly get a preview of a frame in progress.

Therfore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the client with a sample of a frame prior to

completion of its rendering in order to provide the client with an preview of a frame in progress.

10. **Regarding claim 2**, Cajolet shows that receiving from a client the render job comprises receiving the render job from a computer remote from the plurality of render servers (computers may be connected via a WAN) (Col 6, Lines 16-17).

11. **Regarding claim 3**, Cajolet shows distributing the first and second frames comprises distributing the first and second frames by a scheduler (88), the scheduler operable determine which of the plurality of render servers are capable of rendering the first and second frames (col. 6 lines 46-55, col. 10 lines 18-25).

12. **Regarding claim 4**, Cajolet shows the scheduler is operable to determine which of the plurality of render servers are capable of rendering the first and second frames by accessing a database storing the capabilities each of the plurality of render servers (col. 8 lines 38-53).

13. **Regarding claim 5**, Cajolet shows the capabilities database stores the type of rendering package associated with each of the plurality of render servers (computational characteristics, user profile, col. 8 lines 43-53).

14. **Regarding claim 6**, Cajolet shows capabilities database stores a processing status for each of the plurality of the render servers (col. 9 lines 53-56).

15. **Regarding claim 7**, Cajolet shows further comprising transmitting the rendered first and second frames to the client (col. 10 lines 34-40).

16. **Regarding claim 8**, Cajolet shows

a resource database (51) comprising resource information regarding a plurality of render servers (col. 8 lines 38-54); and

a schedule server (88) coupled the plurality of render servers via a communications medium, the schedule server operable to receive a render job from a client, the render job having an associated job profile and a plurality of image frames in a sequence (Col 5, Line 54 to Col 6, Line 8);

the schedule server operable to distribute a first frame of the sequence to a first one of a plurality of render servers based on a comparison of the job profile and the resource information (col. 6 lines 2-8, 28-45, col. 7 lines 48-52), the schedule server operable to provide one or more samples of the rendered first frame received from the first one of the plurality of render servers for the render job to the client prior to completion of the render job by the first one of the plurality of render servers (frames/portions are received and stored as they are received)(Col 10, Lines 34-40); and

the schedule server operable to receive an input from the client in response to the one or more samples (assigns a new portion of the render job to the available assisting computer)(at least Col 10, Lines 40-47).

Cajolet fails to specifically disclose providing a sample of the frame prior to completion of rendering the frame. Hancock discloses a similar system for distributed rendering and teaches providing samples of an image prior to completion of rendering the image (at least Section 2.1; Section 3, "Refinement"; and Fig 8). This would have been an advantageous addition to the system disclosed by Cajolet since it would have allowed the user to quickly get a preview of a frame in progress.

Therfore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the client with a sample of a frame prior to completion of its rendering in order to provide the client with an preview of a frame in progress.

17. **Regarding claim 9**, Cajolet shows the resource information comprises the type of rendering package associated with each of the plurality of render servers (computational characteristics, user profile, col. 8 lines 43-53).

18. **Regarding claim 10**, Cajolet shows the resource information comprises a processing status for each of the plurality of the render servers (col. 9 lines 53-56).

19. **Regarding claim 11**, Cajolet shows schedule server is operable to determine whether a particular one of the render servers is capable of rendering a particular render job (col. 10 lines 18-25).

20. **Regarding claim 12**, Cajolet shows resource database further comprises resource information regarding a plurality of render hosts associated with respective ones of the render servers (col. 8 lines 43-53).

21. **Regarding claim 13**, Cajolet shows resource information comprises hardware configuration information regarding the render hosts (col. 8 lines 43-53).

22. **Regarding claim 14**, Cajolet shows steps for:

a local rendering system operable to receive from a client a render job having a plurality frames in an animation sequence (col. 5 lines 54- col. 6 line 4); and

at least one remote rendering system comprising a plurality of remote render servers (fig. 3, col. 6 lines 11-17) and operable to:

receive from the local rendering system the render job; distribute a first frame of the sequence to a first one of the plurality of remote render servers and a second frame of the sequence to a second one of the plurality of remote render servers the first and second frames being different (col. 6 lines 2-8, 28-45, col. 7 lines 48-52)

render the first and second frames concurrently at the first and second remote render servers (col. 6 lines 4-8, 40-45, col. 10 lines 18-25); and

return a result of the render job to the local rendering system (col. 10 lines 34-37);

wherein the remote rendering system is operable to provide one or more samples of the rendered first or second frames for the render job to the local rendering system prior to completion of the render job by the remote rendering system (Col 10, Lines 34-40); and

wherein the remote rendering system is operable to receive an input from the client in response to the one or more samples (client assigns a new portion of the render job to the available assisting computer)(at least Col 10, Lines 40-47).

Cajolet fails to specifically disclose providing samples of the frames prior to completion of rendering the frame. Hancock discloses a similar system for distributed rendering and teaches providing samples of an image prior to completion of rendering the image (at least Section 2.1; Section 3, "Refinement"; and Fig 8). This would have been an advantageous addition to the system disclosed by Cajolet since it would have allowed the user to quickly get a preview of a frame in progress.

Therfore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the client with a sample of a frame prior to completion of its rendering in order to provide the client with an preview of a frame in progress.

23. **Regarding claim 15**, Cajolet shows:

a plurality of render servers operable to render a render job having an associated job profile (graphics program, col. 6 lines 34) ;

a resource database comprising resource information regarding the plurality of render servers (col. 8 lines 43-53); and

a schedule server (88- program dispatcher) coupled to the render server via a communications medium and operable to distribute the render job to one or more of a plurality of render servers based on a comparison of the job profile and the resource information (col. 6 lines 3-8).

24. **Regarding claim 16**, Cajolet shows:

a resource database comprising resource information regarding the plurality of render servers (col. 8 lines 43-53); and

a schedule server (88) coupled to the remote render servers via a communications medium and operable distribute the render job to at least the first and second remote render servers based on a comparison of the job profile and the resource information (col. 6 3-8, col. 10 18-25).

25. **Regarding claim 17**, Cajolet shows the resource information comprising the type of rendering package associated with each of the plurality of remote render servers (computation characteristics, col. 8 lines 43-53).

26. **Regarding claim 18**, Cajolet shows the resource information comprises a processing status for each of the plurality of remote render servers (col. 9 lines 53-56).

27. **Regarding claim 19**, Cajolet shows the schedule server is operable to determine whether a particular one of the remote render servers capable of rendering a particular render job (col. 8 lines 38-53).

28. **Regarding claim 20**, Cajolet shows the resource database further comprises resource information regarding a plurality of render hosts associated with respective ones of the remote render servers (col. 8 lines 43-53).

29. **Regarding claim 21**, Cajolet shows:

receiving a render job having a plurality of frames in an animation sequence from a client at a first rendering site (66, 88, col. 5 lines 54- col. 6 line 4) ;

transferring the render job from the first rendering site to a second rendering site (80), the second rendering site located remote from the first rendering site and comprising a plurality of remote render servers (fig. 3, col. 6 lines 9-60);

distributing a first frame of the sequence to a first one of the plurality of remote render servers and a second frame of the sequence to a second one of the plurality of remote render servers, wherein the first and second frames are different (col. 6 lines 2-8);

rendering the first and second frames concurrently at the first and second remote render servers (col. 6 lines 4-8, 40-45, col. 10 lines 18-25);

providing one or more samples of the rendered frames for the render job to the client prior to completion of the render job by the first and second remote servers (Col 10, lines 34-40); and

receiving an input from the client in response to the one or more samples (assigns a new portion of the render job to the available assisting computer)(at least Col 10, Lines 40-47).

Cajolet fails to specifically disclose providing samples of the frames prior to completion of rendering the frame. Hancock discloses a similar system for distributed rendering and teaches providing samples of an image prior to completion of rendering the image (at least Section 2.1; Section 3, "Refinement"; and Fig 8). This would have been an advantageous addition to the system disclosed by Cajolet since it would have allowed the user to quickly get a preview of a frame in progress.

Therfore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the client with a sample of a frame prior to completion of its rendering in order to provide the client with an preview of a frame in progress.

30. **Regarding claim 22**, Cajolet shows transmitting the rendered first and second frames to the client (col. 10 lines 34-40).

31. **Regarding claim 23**, Cajolet shows transmitting the rendered first and second frames from the second render site to the first render site (col. 10 lines 34-40).

32. **Regarding claim 24**, Cajolet shows storing the rendered first and second frames in a location accessible by the client (col. 10 lines 34-40).

33. **Regarding claim 25**, Cajolet shows the first rendering site comprises: a plurality of render servers operable to render a render job having an associated job profile (fig. 3);

a resource database comprising resource information regarding the plurality of render servers (col. 8 lines 38-53); and

a schedule server coupled the render server via a communications medium and operable to distribute the render job to one or more of a plurality of render servers based on a comparison of the job profile and the resource information (col. 6 lines 46-60).

34. **Regarding claim 26**, Cajolet shows a resource database comprising resource information regarding the plurality of render servers (col. 8 lines 38-53); and

35. a schedule server coupled to the remote render servers via a communications medium and operable distribute the render job to at least the first and second remote render servers based on a comparison of the job profile and the resource information (col. 6 lines 46-60).

36. **Regarding claim 27**, Cajolet shows files associated with the render job from the first site to the second site, the associated files being necessary to render the render job (col. 9 lines 1-4).

37. **Regarding claim 28**, Cajolet shows the associated files comprise a texture file (col. 5 lines 60-66).

38. **Regarding claim 29**, Cajolet shows notifying, by the second rendering site, the first rendering site when the render job has been rendered (col. 10 lines 34-37).

Conclusion

39. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

40. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Strange whose telephone number is 571-272-3959. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glen Burgess can be reached on 571-272-3949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AS
1/18/07

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER